REMARKS

Objections to the Drawings

The drawings are objected to because sequence identifiers are not provided for the disclosed sequences. The specification has been amended to provide the sequence identifiers in the Brief Description of the Drawings section of the specification. This provides all necessary information for compliance with rules 1.821 through 1.825

The Rejection of Claims 2, 4, 8, 20-22, and 33 Under 35 U.S.C. § 103(a)

Claims 2, 4, 8, 20-22, and 33 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Steinman (U.S. 5,516,292) in view of Stratagene Catalog 1995. Applicants respectfully traverse the rejection.

Steinman is cited for teaching use of a restriction endonuclease – not *Alu*I– for decontaminating a PCR reaction. Stratagene is cited to teach that *Alu*I is a known restriction endonuclease. The Office Action asserts that it would have been obvious to combine the two teachings and that one of skill in the art would have had a reasonable expectation of success.

Applicants previously argued and pointed to record evidence that one of skill in the art would not have had a reasonable expectation of success. The evidence of record indicates that one of skill in the art would have had an expectation of failure for its intended purpose. DeFelippes, previously cited in a prior Office Action, attempted to use *Alu*I to decontaminate *in vitro* amplification reagents. However, DeFelippes taught that *Alu*I was not suitable for the intended purpose.

The intended purpose of the claimed method is set out in the cited Steinman patent, U.S.

5,516,292. "The polymerase chain reaction method is so sensitive that only a small sample of template DNA is needed for multiplication to occur. Therefore the presence of even a minute quantity of contaminant template DNA containing the target sequence could quite possibly result in the amplification of the contaminant template DNA and a mixture of amplified template and amplified contaminant template DNA." Paragraph spanning columns 1 and 2. Further, Steinman explains the significance of contamination in the diagnostic arena, stating that "even the use of such routine procedures as pipetting or the opening and closing of the reaction mixture container may result in the introduction of a sufficient amount of aerosolized material to interfere with the diagnostic use of the polymerase chain reaction method." Column 2, lines 27-31.

The Patent Office has agreed that DeFelippes teaches away, withdrawing the rejections based on DeFelippes. "With regard to the rejection made in the previous office action under 35 U.S.C. §103(a) as being unpatentable over Steinman et al., in view of DeFelippes, Applicants' arguments are fully considered and the rejection is withdrawn in view of the persuasive arguments and new grounds of rejections." Office Action mailed September 22, 2006, at page 7, lines 16-19.

However, the Patent Office maintains the rejection for five reasons. These reasons (identified by underscoring and numbering), however, are legally incorrect. Each is addressed separately below.

1. The rejection is based on Steinman's generic teachings of use of type II restriction endonucleases and Stratagene's teaching that "*AluI* is an equivalent enzyme to said type II restriction endonucleases." Office Action mailed March 19, 2007 at page 3, line 20 to page 4, line 3.

*Alu*I is not an equivalent of a type II enzyme, but rather it is a species of type II enzyme. See U.S. 5,334,526, abstract (Exhibit A). Thus, Steinman's teaching of using type II restriction enzymes is generic to the use of *Alu*I. It is axiomatic that a species can be patentable over a generic teaching. The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. MPEP 2144.08. Moreover, a reasonable expectation of success is required. See *In re Dow Chemical*, 5USPQ2d 1529, 1531 (Fed. Cir. 1988) and *Hadosh v. Block Drug Co.*, 229USPQ 182, 187 n.5 (Fed. Cir. 1986). In the present case, the DeFelippes reference teaches away from using *Alu*I to decontaminate a PCR reaction. DeFelippes teaches that *Alu*I does not work for the intended purpose of removing all contamination. As previously demonstrated by documentary evidence and as explained in Steinman, the exquisite sensitivity of PCR reactions requires that the decontamination be complete. The Patent Office acknowledged the persuasiveness of this argument, withdrawing the rejection over Steinman in view of DeFelippes office action mailed September 22, 2006 ("withdrawn in view of persuasive arguments").

The fact that DeFelippes is no longer a basis for the rejection does not remove it from the state of the prior art. It remains relevant evidence of the state of the prior art. DeFelippes directly teaches away from using *Alu*I, demonstrating it to be unsuitable for its intended purpose. *Alu*I as used in DeFelippes' method did not completely or consistently remove contaminants. This direct and probative teaching cannot be swept under the rug by removing it as a basis for the rejection.

2. An unappreciated property of a prior art composition does not render an old composition patentably new. Office Action at page 4, lines 4-13.

The Patent Office cites *Atlas Powder* and *In re Best* regarding inherent properties of old compositions not imparting patentability. However, in the present case, applicants claim a method of use. Thus, Steinman does not differ from the present invention merely by an inherent property of a claimed composition. Applicants are not claiming *AluI* compositions. Rather, they claim a method employing *AluI*. The prior art DeFelippes, however, specifically taught away from using *AluI* for PCR decontamination. Thus, one of skill in the art, at the time of the invention would have had possession of both the Steinman and DeFelippes references and would have recognized that all members of the type II genus would not be suitable for decontaminating PCR reactions.

3. The new use of *AluI* is allegedly inherent in the properties of type II enzymes and their equivalents. Office Action mailed March 19, 2007 at page 4, lines 13-16.

A genus does not anticipate a species. M.P.E.P. § 2144.08. Perforce, a genus does not inherently disclose a species. Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. *Atlas Powder Co. v. Ireco Inc.*, 51 U.S.P.Q.2d 1943, 1947 (Fed. Cir. 1999). A teaching of use of a type II enzyme generically, as in Steinman, does not necessarily employ *AluI*. Other type II enzymes could be used. As shown in Exhibit B, there are over 200 type II enzymes commercially available from a single vendor. Therefore, the use of *AluI* is not inherent in the use of a type II enzyme.

4. The use of *AluI* is merely discovery of optimum or workable ranges. Such a discovery is considered routine rather than inventive. Office Action mailed March 19, 2007 at page 4, lines 18-24.

The present claims do not recite optimum or workable ranges. This assertion is facially inapplicable to the present claims.

5. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. Office Action mailed March 19, 2007 at page 5, lines 18-22.[1]

The claimed subject matter is not, however, a composition. A composition when known is known. However, a method of using a composition in a way that the prior art taught against can be patentable. DeFelippes described *Alu*I as not fit for the intended purpose of decontaminating PCR reactions. Its successful use in such a method, therefore would be surprising, unexpected, and subject to patent protection.

Withdrawal of this rejection is therefore respectfully requested.

The Rejection of Claims 5-7 and 9-19 Under 35 U.S.C. §103(a)

Claims 5-7 and 9-19 are rejected as obvious over Steinman and Stratagene, cited and discussed above, further in view of Hoshina.

Each of the rejected claims is dependent on claim 2. Hoshina is cited to teach various additional limitations of the dependent claims. For example, a treated blood sample (claim 5), systemic bacteremia (claim 6), a particular single primer (claim 7), gel electrophoresis (claim 9), ethidium bromide (claim 10), urine (claim 12), cerebrospinal fluid (claim 13), 16S RNA (claim 15), sequencing (claim 16), and restriction mapping (claim 17) are all allegedly taught by

[1] The meaning of the phrase "teaching in" as used in this section of the Office Action is not clear. The Office Action states: "[A] teaching away, is a significant factor to be considered as "teaching in." In the instant context, the use of Alu I is a significant factor considered as to teaching in."

Hoshina. However, Hoshina does not cure the deficiency of the two primary references or overcome the teaching away of the record evidence.

DeFelippes and Exhibits A-J submitted June 13, 2006, establish persuasively and definitively that there would have been no reasonable expectation of success for the method of the present invention because DeFelippes taught the unsuitability of *Alu*I for PCR reagent decontamination. Thus, the *prima facie* case of obviousness is rebutted and overcome by the record evidence.

Withdrawal of this rejection is respectfully requested.

Respectfully submitted,

By: /Sarah A. Kagan/
Sarah A. Kagan
Registration No. 31,141

Date: September 18, 2007

Customer No. 22907
Banner & Witcoff, LTD.